

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION (REGION 9)**

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STATUS REPORT: SANTA MARGARITA HYDROLOGIC UNIT

The purpose of this report is to describe current activities and priorities of the San Diego Regional Water Quality Control Board (SDRWQCB) for addressing water quality issues in the Santa Margarita Watershed. As discussed in the SDRWQCB's Watershed Management Approach, dealing with complex and intertwined water quality and beneficial use issues, which involve both point and nonpoint sources, requires a comprehensive, coordinated process on the part of the SDRWQCB. By preparing this report, staff is taking an incremental step to integrate its programs and functions to effectively and efficiently address water quality and beneficial use issues in the Santa Margarita Watershed.

The report begins by providing an overview that describes the drainage areas, the population and projected growth, and the beneficial uses of the water resources in the watershed. The report then discusses the activities of the various SDRWQCB programs. Although the report touches upon all programs, the discussion is more detailed for the programs that directly relate to urban development.

WATERSHED CHARACTERISTICS

The Santa Margarita River Watershed is a rectangular area of approximately 750 square miles. It lies within northern San Diego County and southwestern Riverside County, and includes the Cities of Murrieta, Temecula, and part of the community of Fallbrook, as well as portions of US Marine Corps' Camp Pendleton, portions of the Cleveland and San Bernardino National Forests, and the Cahuilla, Ramona, Pauma, and Pechanga Indian Reservations. Temecula Creek, which drains the Palomar Mountains (360 square mile watershed), and Murrieta Creek, which drains the Santa Ana Mountains (220 square mile watershed), join to form the Santa Margarita River, near the City of Temecula. The river then flows into Temecula Gorge and crosses the San Diego County line just north of Fallbrook. It flows approximately 27 miles, through unincorporated San Diego County, the City of Fallbrook, and Camp Pendleton and terminates at the Santa Margarita Lagoon and Pacific Ocean. The expansive coastal

lagoon/estuary at the mouth of the river is normally closed off from the ocean by a sandbar.

The Santa Margarita Hydrologic Unit is comprised of the following nine hydrologic areas: the Ysidora, Deluz, Murrieta, Auld, Pechanga, Wilson, Cave Rocks, Aguanga, and Oak Grove Hydrologic Areas. The Santa Margarita is divided into lower and upper reaches, as defined by the confluence of De Luz Creek, downstream from the City of Fallbrook.

The upper Santa Margarita Watershed is one of the fastest growing urban areas in California. As of January 1, 2002, the population in the City of Murrieta was 46,250 and that in the City of Temecula was 61,500. Unincorporated Riverside County was 441,500. The Riverside County general plan states that the county's population is expected to double (to 2.8 million) by the year 2020. The California Department of Finance estimates that the County will continue to grow to 3.5 million people by 2030 and 4.5 million people by 2040. The population growth in the City of Murrieta from January 1, 2001 to January 1, 2002 was 11.6%. The growth in the City of Temecula has recently been 18.2%, and that in unincorporated areas (of the entire county) has been 2.8%. The average percent change in population in the entire state was 1.9%. The growth in Riverside County has been significantly higher than neighboring counties (California Department of Finance). In the absence of effective planning measures, this rapid development will likely exacerbate surface water quality problems.

Annual precipitation ranges from less than 12 inches near the coast to more than 45 inches inland near Palomar Mountain. Vail Lake, Skinner Reservoir, and Diamond Valley Reservoir are major impoundments within this watershed. The Santa Margarita river provides groundwater recharge to Camp Pendleton's only domestic water supply.

Designated **beneficial uses for the Santa Margarita River** include MUN, AGR, IND, PROC, REC1, REC2, WARM, COLD, WILD, and RARE.¹ A few examples of these uses are described below.

The Santa Margarita is the least disturbed river system south of the Santa Ynez River in Santa Barbara County.² The upper watershed, which drains the cities of Murrieta and Temecula is rapidly urbanizing, but the river and estuary have largely escaped the development typical of coastal southern California. The river's riparian corridor contains the highest density and overall diversity of bird species of any natural area in the south coastal river basin.³ It supports a

¹ Water Quality Control Plan for the San Diego Basin, San Diego Regional Water Quality Control Board. 1994.

² Santa Margarita Hydrologic Unit Profile.

<http://euruka.regis.berkeley.edu/wrpinfowatersheds/briefs/santamargarita/index.html>

³ Evans, Steve. 1994. San Diego Earth Times. *Santa Margarita River: refuge in an urbanizing land.*

substantial percentage of the nation's entire population of the endangered least bell's vireo, and many other sensitive and endangered bird and fish species.

The Bureau of Land Management has determined that a small segment of the river, near the 4,000-acre Santa Margarita Ecological Reserve is eligible for national Wild and Scenic River Status. The Ecological Reserve is administered by San Diego State University and is dedicated to teaching and research in the field sciences, as well as protecting and preserving the area. The Nature Conservancy also owns some of river frontage property just downstream of Temecula. These publicly-owned preserve areas make up almost six miles of the river between Temecula and the San Diego County line.

The Santa Margarita Watershed is also home to vernal pools. These special biological communities were once very abundant in southern California, but now they're almost exclusively limited to the two military bases in San Diego County (Miramar and Pendleton) because of agricultural and urban development.⁴ There are 13 identified vernal pools in the upper reaches of the Santa Rosa Plateau Ecological Preserve; the largest covers 25 acres.⁵ These vernal pools support several threatened and endangered species.

The Santa Margarita River, and its groundwater basin, provide the principal source of water for the watershed. Historically, in the Temecula area, the 85,500-acre Vail Ranch was a major water user. In 1948, Vail financed the dam that created Vail Lake. When Camp Pendleton was established downstream in 1942, the demand for water significantly grew. In between Camp Pendleton and the Temecula Valley, a small urban and agricultural community was growing in Fallbrook, adding to the increasing water use. The river continues to provide an important water supply by restoring groundwater aquifers for domestic, agricultural, and industrial use. Today, the Rancho California Water District (which purchased Vail Ranch), Camp Pendleton, and the Fallbrook Public Utilities District are among those agencies who are dependent on the water from the Santa Margarita River. To support these beneficial uses, increasing urbanization and water quality are pertinent issues that must be addressed in the watershed.

SDRWQCB PROGRAMS AND STAFF ACTIVITIES

Water Quality Assessment Program

Monitoring and assessment of water quality and beneficial uses is essential in order to measure the success of the State Water Resources Control Board (SWRCB) and the RWQCBs in achieving their mission. Ultimately, the only

⁴ Friends of the Santa Margarita River webpage.
<http://www.santamargaritariver.org/ecology/vernal.html>

⁵ Friends of the Santa Margarita River web page.
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meaningful measure of the success of the SWRCB and the RWQCBs is the condition of water quality and beneficial uses. An effective water quality assessment program is capable of:

- (a) Identifying and characterizing water quality and beneficial use problems and threats;
- (b) Identifying trends in water quality and beneficial uses;
- (c) Determining whether water quality standards are met;
- (d) Evaluating the uniqueness or pervasiveness of problems;
- (e) Evaluating the relative severity of problems;
- (f) Providing the information to make decisions about which problems and which locations should be prioritized for action and what actions should be taken.

In accordance with Clean Water Act section 305(b), the SWRCB and RWQCBs periodically compile an inventory of the state's major waters and the water quality condition of those waters, using monitoring data and other pertinent information. This inventory is known as the Water Quality Assessment. Waters are categorized as good, intermediate, impaired, or of unknown quality. Impaired waters are categorized in accordance with requirements of various Clean Water Act sections [e.g. 131.11, 303(d), 304(m), 304(s), 304(l), 314, and 319].

Rainbow Creek and the Santa Margarita Lagoon are on the **Clean Water Act section 303(d)** list for eutrophication. Murrieta Creek and the upper Santa Margarita River are on the proposed list as impaired for phosphorus. The Staff Report for the Draft CWA Section 303(d) List of Impaired Waters – 2002 Update states that potential sources causing the phosphorus impairment are urban runoff, agriculture runoff, and other point and non-point sources. Other serious water quality concerns in the watershed include excessive sedimentation from development and agricultural areas, groundwater degradation and contamination from nitrates and other salts, habitat loss, channelization, flooding and scour. Table 5 of the Draft CWA Section 303(d) List, Constituents \ Waterbodies of Potential Concern includes the following constituents of potential concern for waterbodies in the watershed:

Waterbody	Constituent of Potential Concern
Entire Santa Margarita River & Tributaries	Sedimentation/siltation
Santa Margarita River (upper)	Iron, manganese, sulfate, total dissolved solids
Murrieta Creek	Iron, manganese, total dissolved solids

There is a need for more extensive and more thorough monitoring and assessment of the waters in the Santa Margarita Watershed. Monitoring and assessment, for both status and trends, needs to be planned, ongoing, and continuous. Obtaining adequate funding to conduct a robust Water Quality Assessment Program is now one of the top priorities of the SDRWQCB.

The SWRCB and RWQCBs have received resources to initiate the **Surface Water Ambient Monitoring Program (SWAMP)**. Mandated by AB 982, SWAMP requires the comprehensive assessment of the quality of surface waters throughout the state. In the San Diego region, a rotating-watershed monitoring plan has been developed that utilizes a tributary, synoptic design to assess water quality in the target watershed. As part of the SWAMP, ten sites will be sampled four times per year in the Santa Margarita and San Dieguito watersheds between May 2003 to April 2004. Staff have begun sample site selection and reconnaissance in the Santa Margarita watershed.

Beginning in 1997, staff developed and implemented an **Ambient Bioassessment Monitoring Program** with the following objectives: 1) assess the overall health of rivers and streams in the San Diego region; 2) develop a diagnostic tool (Index of Biotic Integrity) for their future assessment; 3) provide baseline data to support the development of biological criteria. Monitoring took place from 1998 through 2001. The California Department of Fish and Game, the contractor for this project, recently submitted the final report for the program. Included in the final report are a preliminary Index of Biotic Integrity (IBI) and an assessment of the biological and physical conditions of the rivers and streams. One significant conclusion in the report is that Sandia and De Luz Creeks, tributaries to the Santa Margarita River, are characterized by a high degree of biological and physical integrity (IBI was consistently "Very Good"). These can be considered reference sites. In comparison, the upper Santa Margarita River, Temecula, Murrieta, and Rainbow creeks exhibited degraded biological and physical integrity (IBI ranged from "Very Poor" to "Good"). These drainages are impacted by urban runoff, a live stream/reclaimed wastewater discharge, and non-point source pollution. Some of the stations that were monitored as part of this program are being incorporated into the Rancho California Water District's NPDES permit, and some will be proposed as part of the new MS4 permit. The SWAMP monitoring will also include limited bioassessment monitoring (May/June 2003 and October 2003).

Monitoring and assessment is not and does not need to be conducted only by SDRWQCB staff. Academic and other research groups, dischargers, and other stakeholders all have a role in monitoring and assessment. Although there is certainly a need for more extensive and more thorough monitoring of the watershed, better coordination of monitoring efforts and better management of information is also needed in order to increase the value, usefulness, accessibility, and use of information obtained from past, ongoing, and future monitoring efforts.

The **Santa Margarita Watershed Water Quality Monitoring Group** consists of the water districts, regulated wastewater dischargers, and interested parties in the watershed, including the SDRWQCB. The purpose of this group was to identify and coordinate all the water quality monitoring activities ongoing in the watershed. The group has created the Framework Monitoring Plan (FMP) to identify water quality issues. The FMP sets the stage for the development of a coordinated, comprehensive monitoring program that meets the goals of all the participants in the group. The future monitoring plan would provide the data necessary to address beneficial uses, compare to 303(d) listing criteria, facilitate TMDL development, determine assimilative capacity, identify relationships between habitat health and water quality, identify relationships between water quality and water supply (and rights), characterize storm water and nonpoint source discharges, determine sediment transport, develop storm water BMPs, promote water recycling, and evaluate regulatory compliance. The FMP has not yet been implemented. The group is currently preparing to develop a model of the watershed to identify data gaps. Staff attend group meetings, but due to the lack of resources, have not contributed significant time to developing the FMP.

NPDES Monitoring

The Rancho California Water District (Rancho), USMC Base Camp Pendleton, and the Riverside County Flood Control and Water Conservation District (RCFC&WCD) conduct water quality monitoring as part of their individual NPDES permits. Staff reviews the monitoring data submitted by these dischargers and uses it to determine compliance with the respective permits. Camp Pendleton samples six stations on a weekly basis for compliance with the NPDES permits for three wastewater discharges. They sample upstream and downstream from each discharge location. Camp Pendleton also samples one location during storm events for compliance with the Statewide Industrial Storm Water Permit. Rancho samples four stations for compliance with the NPDES permit for their live stream discharge, and one additional station for their own purposes. Typical sampling parameters for both of these dischargers include, but are not limited to, TDS, DO, coliform, chlorine, and nutrients. Furthermore, the RCFC&WCD samples wet and dry weather discharges at several locations for compliance with the Municipal Storm Water Permit for the Santa Margarita Watershed in Riverside County (MS4 permit). To date, the MS4 monitoring program has not provided sufficient information to characterize storm water discharges or to identify trends or pollutant sources.

San Diego State University conducts monitoring at several stations near the **Santa Margarita Ecological Preserve**. They have recently implemented a wireless monitoring system that will convey real-time data to the internet. There are currently four stations which monitor for dissolved oxygen, pH, conductivity,

temperature, and flow on a continuous basis. Staff are not involved in this program, but the data may be useful for future water quality assessments.

The **San Diego Stream Team** has been conducting bioassessment monitoring since 1998 in Sandia and De Luz Creeks as well as the Santa Margarita River. Also, Mission Resource Conservation District is using 319(h) funding to conduct volunteer bioassessment monitoring at 3 stations in the watershed.

Basin Planning Program

In the last several years, the Basin Planning Program has, for all practical purposes, ceased to exist as attention has been given to the new TMDL Program.

TMDL Program

Rainbow Creek, a small tributary to the Santa Margarita River is listed on the Clean Water Act, 303(d) list as an impaired water body for eutrophication as a result of extremely elevated nitrate concentrations reported in the mid-1980's. Excess nutrients are exceeding water quality objectives for nitrates in drinking water and biostimulatory substances. Excess nutrients and algal growth are impairing municipal supply, habitat and recreational beneficial uses. Various land use activities have been identified as nutrient sources and primarily include agricultural fields and orchards, commercial nurseries, residential and urban areas, and septic systems. As a result, total maximum daily loads (TMDLs) are being established for nitrates, total nitrogen, total phosphorous and sunlight. The TMDL was taken in front of the Regional Board on May 8, 2002. The Board requested revisions to the TMDL prior to considering it again. The Board directed staff to present the TMDL for consideration following the State Board's approval of the draft 303(d) List of Impaired Waterbodies. Staff is currently working to complete the TMDL.

The Santa Margarita Lagoon TMDL is scheduled to start in 2008/2009.

NONPOINT SOURCE PROGRAM

As noted in the SDRWQCB's Watershed Management Approach, nonpoint source (NPS) pollution, which includes, but is not limited to, polluted runoff, is the leading cause of water quality impairment to surface and ground waters in the San Diego Region, as well as statewide and nationwide. NPS pollution comes from many diffuse sources and the distinction between point source and nonpoint sources is not always clear. This is particularly true regarding urban runoff, which is clearly diffuse and nonpoint in origin, but is typically channelized and discharged through discrete pipes into receiving waters. Because it is typically channelized, often through a vast network of underground pipes, urban runoff is

legally considered a point source discharge and is increasingly addressed through regulations in municipal storm water permits. The complex relationship between the nonpoint source origin of urban runoff, and its point source discharge from discrete storm drainpipes, presents the SDRWQCB with both significant challenges and opportunities. The fact that the Riverside County portion of the watershed is one of the fastest growing urban settings in the country serves to further magnify the challenges.

The conversion of undeveloped and agricultural lands to urban uses has the potential to increase nonpoint source pollution loads into already impaired water bodies and to cause impairments where they do not exist. The NPS impacts of these land use changes are often magnified by the changes in hydrology that are often associated with the use changes, e.g., increased runoff volumes and higher peak flowrates, as a result of increased percentage of impervious surface in watersheds (i.e., hardscaping). Impacts associated with urbanization include:

- Elimination of natural channels, including the loss of wetlands, wildlife, fisheries and riparian habitat;
- Increased sedimentation due to construction activities;
- Unmitigated changes in hydrology that upset the geomorphic equilibrium of streams, causing destabilization and erosion of channels and more frequent flooding;
- Introduction and perpetuation of non-native invasive species of plants and animals (from landscaping, aquaria, etc.); and
- Increased pollutant loads associated with urban human activity (nutrients, pathogens, pesticides, PCBs, PAHs, petroleum, salts, nitrates, metals, trash, sediment, etc.).

Most new urban development projects in the watershed involve some level of hydromodification. Hydromodification is the physical alteration of stream channels or their flow. The adverse impacts to water quality and beneficial uses associated with hydromodification projects include:

- Elimination of natural channels and associated habitat complexity, including loss of wetlands, wildlife, fisheries and riparian habitat;
- Increased sedimentation due to construction activities;
- Changes in hydrology that upset the geomorphic equilibrium of streams causing destabilization and erosion of channels;
- Increased water temperatures;
- Introduction and perpetuation of non-native invasive species of plants and animals; and
- Decreased natural water quality purification functions that could otherwise intercept and assimilate or detoxify pollutants.

The impact of decreasing or eliminating the water quality purification functions of the Santa Margarita Watershed is most pronounced in urban and agricultural settings, where such functions are most needed. The adverse downstream impacts of urbanization can therefore be magnified by the extent of hardscaping that is utilized within the drainage systems of the developments.

California's Nonpoint Source (NPS) Pollution Control Program has been in effect since 1988. A key element of the Program is the "Three-Tiered Approach," through which self-determined implementation is favored, but more stringent regulatory authorities are utilized when necessary to achieve implementation.

Tier One NPS Activities

Tier one includes public education and outreach. SDRWQCB staff will continue to actively participate with local resource conservation districts, educational organizations, lagoon foundations, and others in providing information to the public on NPS pollution, the NPS program, appropriate management measures, and best management practices. Routine nonpoint source-related meetings attended by Regional Board staff in the watershed are summarized in the following table:

Group / Project / Organization Name	Lead Entity
Santa Margarita River Water Quality Monitoring Group	Camp Pendleton/ San Diego State University
Warm Springs Project	RB and Riverside Land Conservancy
MS4 Copermittee Meetings	RCFC&WCD
Murrieta Creek Advisory Committee	City of Murrieta
Weed Management Area	Elsinore-Murrieta-Anza RCD

The SDRWQCB will also continue to support Tier One activities through active participation in the development, review, selection, and management of grants. Staff assists project proponents to develop worthwhile proposals in the watershed for federal funding available under Clean Water Act Sections 104(b)(3), 106, 205 (j) and 319 and state funding under the State Revolving Fund, and the Costa-Machado Water Act of 2000 (Proposition 13). Staff is managing the following **State and Federal Grants** In the Santa Margarita Watershed:

- A 319(h) grant was awarded in 2001 to Mission Resource Conservation District for the Santa Margarita Home 2 Ocean, A

Citizens Water Quality Monitoring Program. This project will implement a pollution prevention education, outreach, and voluntary monitoring program. The monitoring program will include bioassessment and some chemical analyses at three locations in the watershed.

- A Proposition 13 grant was awarded to the County of San Diego for the development of a watershed management plan for the Santa Margarita Watershed. San Diego County plans to develop the watershed management plan in cooperation with a wide range of stakeholders. Tasks in the scope of work for the grant include organizing a watershed management group and identifying stakeholders, creating an inventory of watershed resources, and identifying issues of concern and potential watershed management objectives in a final report. The project is in its beginning stages. The County is currently organizing the first stakeholder meeting.
- The SDRWQCB received a 104(b) grant from the Environmental Protection Agency (EPA) to complete a guidebook for the hydrogeomorphic (HGM) assessment of riverine waters/wetlands in the Santa Margarita Watershed. The guidebook will help to fully assess the impacts of future development projects on riverine functions, to determine effective mitigation requirements, and to develop monitoring protocols and contingency measures. A regional guidebook has been under development by the EPA and other agencies since 1993. With the 104(b) funds, staff is finalizing the guidebook so that it can be made available to the regulatory agencies and other stakeholders in the Santa Margarita Watershed. The final report is due to the EPA on March 31, 2003.

The following applications for grant funding are currently being considered:

- A 319(h) grant to the Riverside County Flood Control and Water Conservation District for the restoration of a habitat corridor along Murrieta Creek.
- A Proposition 13 grant to the Elsinore-Murrieta-Anza Resource Conservation District for part of the Warm Springs Creek project described below.

In 1999, this office established an in-lieu fee mitigation account that Section 401 Water Quality Certification project applicants can pay into as mitigation for impacts to water bodies in the watershed. The account was established for the **restoration of a segment of Warm Springs Creek**. Staff in the Northern Watershed Protection Unit have been working with the City of Murrieta, the County Flood Control District, and other resource agencies to develop a plan to restore a concrete-lined section of the creek.

Tier Two NPS Activities

Tier two activities use regulatory-based encouragement to promote the implementation of appropriate NPS management practices. These activities would include waiving adoption of waste discharge requirements on condition that the discharger develops and implements effective best management practices (BMPs) and alternatively, the SDRWQCB may enforce BMPs by entering into an agreement with other agencies that have the authority to enforce BMPs. The projects and operations in the Santa Margarita Watershed involving SDRWQCB waivers include developments proposing subsurface disposal systems, agricultural irrigation water, nursery irrigation water, stream channel alterations, and green waste composting facilities. The following describes some of the opportunities for staff to encourage other agencies to require BMPs.

Within severe funding constraints, staff has not been able to review and comment on all the environmental documents submitted as part of the California Environmental Quality Act (CEQA) process. Consequently we have not been providing the project proponents with an early indication of our concerns and potential water quality issues associated with their proposals, and perhaps we have lost opportunities to encourage and facilitate projects which incorporate measures to minimize the generation of the NPS pollutants and their effects. Between January 2, 2001 and September 16, 2002, the Regional Board received 39 CEQA documents for projects in the Santa Margarita Watershed. No staff responses were sent regarding these documents. The 39 documents included 6 Draft EIRs, 3 EIRs, 11 Mitigated Negative Declarations, 15 Negative Declarations, and 4 NOP EIRs. One of the most significant documents that was submitted is the draft general plan for the County of Riverside. The general plan contains policies for future development and land use planning, and it is important that these policies are protective of water quality and consistent with requirements in the new MS4 permit and in 401 Water Quality Certifications.

Another Tier two function is participation in the development of **US Army Corps of Engineers Special Area Management Plan (SAMP)**. The Corps is working with Riverside County to develop a SAMP for the Santa Margarita Watershed. The SAMP is a comprehensive planning effort with the goal of establishing expedited regulatory permit processing by using programmatic permits for various types of development activities. Major elements of the SAMP include a planning level aquatic resources delineation of both federal and state jurisdictional waters and wetlands; a functional assessment to determine the value of the identified waters and wetlands; the development and analysis of management alternatives with respect to the identification of development areas; and the identification and assessment of aquatic resource reserve systems. Although the Regional Board supports the watershed assessment approach of the SAMP, staff does not have the resources to participate in its development.

The US Army Corps of Engineers, in cooperation with the Cities of Murrieta and Temecula, and the County of Riverside, has developed the **Murrieta Creek Flood Control Plan**. The NEPA documentation has been completed and federal funds have been dedicated for the project. The project proposes a combination of mowing, unmaintained riparian strips, bank stabilization, and sediment removal to provide flood protection. Portions of the project that are financed with federal funds may be exempt from the 401 process and some maintenance activities (e.g., mowing) are also exempt. Sediment removal and bank stabilization may be subject to 401 and Porter-Cologne, depending on how the activity is conducted.

Staff has conducted Tier two activities in the watershed related to **nursery runoff pollutant control**. Staff participated in a June 2002 workshop on this issue that was conducted by the San Diego Farm Bureau and is currently assisting, when needed, the County Department of Agriculture in advising nursery operators on management measures to curtail runoff.

Tier Three NPS Activities

Although the SDRWQCB actively encourages self-determined implementation of NPS control measures and practices, the SDRWQCB has utilized waste discharge requirements and enforcement actions where Tier One and Two approaches were not appropriate. Enforcement actions have been taken for several kinds of activities, including new urban construction projects where there were inadequate erosion control measures, green waste storage sites, horse corrals with inadequate runoff protection, and commercial nurseries where there were inadequate measures to prevent the discharge of contaminated irrigation runoff. Specific Tier Three Activities are discussed in the following sections.

WATER QUALITY CERTIFICATION (WETLANDS) PROGRAM

Wetlands provide habitat for many species of biota and serve water quality protection functions for downstream waters. A large percentage of wetland acreage has been lost or degraded as a result of dredging, filling, and other physical modifications.

The following provisions of the **California Wetlands Conservation Policy** (established August 23, 1993 through Executive Order W-59-93) are long term goals for wetlands in the San Diego region:

"Ensure no over all net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship and respect for private property."

"Reduce procedural complexity in the administration of State and Federal wetlands conservation programs."

"Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetland conservation and restoration."

The guiding principles and strategies to ensure that these long term goals for wetlands in the Santa Margarita Watershed are achieved include:

- Protect and preserve existing wetlands.
- Protect vernal pool complexes as unique wetland habitats which are extremely difficult to recreate.
- Preserve high quality ephemeral stream habitats in those areas (such as on military bases and in large rural parks) which can be protected from the hydrological changes which accompany urban development. (The concept of such "stream reserves" was discussed in the 1988 SDRWQCB staff report on *"Stream Enhancement and Reclamation Potential - 1988 through 2015."*)
- Preserve wildlife corridor and connectivity functions along riverine systems.
- Protect wetlands from the invasion of non-native species.
- Provide sufficient vegetated buffer around wetlands to protect wetland habitat functions.
- Promote public awareness of the important habitat and water quality protection functions of wetlands.
- Expand the acreage of wetlands in developing areas to treat urban runoff, recognizing that wetlands provide water quality protection functions.
- Encourage the use of constructed wetlands to improve water quality and enhance beneficial uses throughout the region.
- Promote management measures that preserve the natural hydrology of the floodway and do not require clearing or other maintenance of native riparian and wetland vegetation in order to maintain flow capacities needed to reduce damage from flooding along riverine systems.

Careful consideration is given to addressing the potential impact of each proposed project on wetland habitats, using the aforementioned principles and strategies. Since January 2002, the RWQCB received 14 applications for **Section 401 Water Quality Certifications (WQCs)** in the Santa Margarita Watershed and have taken action on six of those applications. Review of a WQC application often involves a site visit, coordination with the U.S. Army Corps of Engineers, California Department of Fish and Game, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and negotiations with the applicant. The time to complete this process varies greatly between each project

and is dependent more on the aquatic resources present on the site and the expected impacts than the size of the project. Processing time also depends on the willingness of the applicant to avoid and minimize impacts and to develop and propose adequate mitigation for unavoidable impacts.

Avoidance and minimization of impacts to natural drainages is the most common obstacle with WQC applications in southwest Riverside County. Ten of the 14 applications propose some sort of channelization or filling of natural drainages. Avoiding drainages and incorporating flood water detention basins on site uses more land than most land developers are willing to concede. In nearly all cases, proposed developments maximize the number of lots, and propose channelizing natural drainages so they can serve as flood control channels in order to meet the requirements of the RCFC&WCD.

For example, a typical project in the rapidly-developing French Valley area proposed channelizing a natural, meandering drainage that is approximately 4,130 feet long and 3 feet wide. The proposal includes creating a 164-foot-wide, straight channel (cutting off approximately 1,860 feet of meanders) with access roads along both banks for flood control maintenance and mowing. This is typical of 401 applications in the area.

Even after a lengthy review process and negotiations, these projects usually result in some type of channelization or impacts to natural drainages that will eventually lead to the cumulative degradation of the remaining natural water resources in the watershed. Segment by segment, tributaries are either being filled, or significantly modified into flood control channels. In addition to destroying the natural resources in the area, these traditional development and flood control practices will increase the frequency and size of flooding and increase impacts to natural drainages downstream.

Some other examples of local agency requirements that conflict with the water quality protection goals of the WQC program are listed below:

- Roripaugh Ranch – an 810-acre residential development in Temecula (File 01C-091) – The City of Temecula was requiring horse trails within the channel of both Long Valley Wash and Santa Gertrudis Creek.
- Crowne Hill – a 335-acre residential development in Temecula (File 00C-128) – The project applicant had agreed to implement fossil filters and a Continuous Deflective Separation unit (a trash separating BMP). After the WQC was conditioned with these water quality treatment BMPs, the City of Temecula required that the WQC be modified because they would not allow these structures to be placed in any publicly owned right of way.
- Pacific Century Homes – a 32-acre residential development in the Wildomar area of Riverside County (File 00C-042) - The applicant agreed to create and

plant a soft-bottom natural channel on-site as mitigation. The RCFC&WCD, however, later required the channel to be a concrete v-ditch.

- The RCFC&WCD conducts routine maintenance on flood control channels, destroying natural habitat and making it difficult for project applicants to create and preserve in-channel mitigation areas. Maintenance requires the construction of access roads adjacent to channels and typically includes the removal of woody vegetation and annual mowing the channel bottom.

Written policies prohibiting channelization and other similar activities would facilitate the 401 WQC application process for SDRWQCB staff and applicants.

Due to the lack of resources, staff is unable to conduct compliance investigations of WQC projects to determine the rate of success of required mitigation, or the cumulative impacts that are occurring in the watershed. The US Army Corps of Engineers, however, did conduct a study of the cumulative impacts of Section 404 permitting on the ecology of the Santa Margarita Watershed. The study concluded that Section 404 permitting has failed to protect aquatic resources in the watershed. Approximately 74% of the acreage impacted has resulted in substantial adverse or adverse impacts to water resources, and less than 1% of the affected acreage resulted in enhancement.⁶ The greatest impacts have been the disruption of movement corridors and floodplain encroachment. Constriction of streams within steep sided channels isolates them from adjacent uplands, limiting dynamic riparian processes such as overbank seed dispersal, and precluding movement of organisms between upland and riparian habitats.⁷ These types of adverse impacts will continue unless proposed development plans avoid and minimize impacts to water resources and include measures to protect water quality.

The next MS4 permit will include post-development storm water management requirements, similar to the Standard Urban Storm Water Mitigation Plans (SUSMPs) required in many other nearby areas. The SUSMPs require the treatment and detention of storm water runoff and typically include the regulation of post-development runoff rates. This would discourage channelization and promote low impact development. As part of the WQC process, staff encourages applicants to begin considering these upcoming regulations and to incorporate them into new development plans. A few applicants have done this, but until a new permit is adopted, it is difficult to convince developers of the benefit.

⁶ Stein, Eric, US Army Corps of Engineers. Assessment of the Cumulative Impacts of Section 404 Permitting on the Ecology of the Santa Margarita, CA Watershed

⁷ Harris and Gosselink. 1990. Cumulative Impacts of Bottomland Hardwood Forest Conversion on Hydrology, Water Quality, and Terrestrial Wildlife in Ecological Processes and Cumulative Impacts.

URBAN RUNOFF PROGRAM

The storm water portion of the NPDES program deals with discharges of pollutants in runoff from municipalities and industrial sites, including construction sites.

Municipal Storm Water

Order No. 98-02 (NPDES Permit No. CAS0108766), as modified by the EPA on April 27, 1999, establishes requirements for the discharge of urban runoff by the County of Riverside, RCFC&WCD, and the incorporated Cities of Murrieta and Temecula within the Santa Margarita Watershed. Pursuant to the Order, the Copermittees developed and implement a Drainage Area Management Plan (DAMP). Staff reviewed the DAMP and determined that the document is out of date and inadequate to control pollutants in storm water runoff to the maximum extent practicable (MEP), as required by the federal NPDES regulations.

The SDRWQCB sent a letter to the Copermittees, dated July 19, 2002, detailing the minimum specifications necessary in a storm water management plan to meet the MEP standard. The letter informed the Copermittees that they should develop a comprehensive management plan as part of their application for a new MS4 permit, due on May 31, 2003. The current Order expires on November 30, 2003. Staff will soon begin preparing a new draft permit based upon the recently issued MS4 permits for Orange and San Diego County.

During this past year, staff has increased the oversight of the Riverside County MS4 permit. In April, staff sent a Notice of Violation to the City of Temecula for the nonsubmittal of their 2000-2001 Annual Report. A CWC Section 13267 request for information was sent to all Copermittees requesting more detailed information in future annual reports. The 2001-2002 Annual Report, received on September 17, 2002, will be reviewed for consistency with this 13267 request. Staff will use the more detailed information to determine the status of the Copermittees' storm water management programs and compliance with permit requirements. Staff has also been attending Copermittee meetings at the RCFC&WCD office and making outreach efforts to prepare the municipalities for the upcoming requirements.

Staff are planning to conduct program evaluations of each Copermittee prior to the issuance of the new permit next year. The purpose of the program evaluations would be to identify exactly how the Copermittees have been implementing their storm water management programs and what they entail.

The **Draft Phase II Governmental Facilities Designation List** is now available on the SWRCB's internet page at <http://www.swrcb.ca.gov/stormwtr/index.htm>.

The deadline for adoption of the Phase II permit is December 2002. The permit would apply to State, Federal and special districts in the watershed including USMC Base Camp Pendleton, the Murrieta Fire Protection District, Murrieta Water District, Murrieta Valley Cemetery District, Murrieta Valley Unified School District, Temecula Valley Unified School District, the Santa Rosa Community Services District, Tenaja Community Services District, Wildomar Cemetery District, Rancho California Municipal Water District and the California Department of Forestry & Fire Protection.

Construction Storm Water

Approximately 300 construction sites in the Santa Margarita Watershed are regulated under the Statewide Construction Storm Water Permit (Phase I). Staff has observed an increase in voluntary compliance with the requirements by developers in the area. The improved compliance record is a result of SDRWQCB and local regulatory staff having a strong field presence during 2001-2002. Staff inspected more than 40 construction sites in Temecula, Murrieta, and unincorporated Riverside County during the rainy season of 2001-2002. Staff issued Notices of Violations (NOVs) to 15 permitted sites, NOVs to 5 nonfiler sites, and 3 Notices to Comply to sites for minor violations. Major construction activity continues in all areas of the watershed, and there are three large acreage projects - Harveston, Crowne Hill, and Murrieta Oaks - in the northern section of the Region 9 boundary. During 2001-2002, Riverside County greatly increased its inspection and oversight efforts of construction sites. Staff noted that efforts by Riverside County have led to increased awareness and compliance at construction sites within their jurisdiction. Regional Board staff needs to increase its efforts to work with the City of Murrieta, City of Temecula, and Riverside County Flood Control to regulate construction sites in compliance with their municipal storm water permit.

Currently, the Statewide Construction Storm Water permit covers construction sites that are 5 acres and greater in size. Beginning March 10, 2003, construction sites that are between 1 and 5 acres in size must also obtain coverage, as required under Phase II of the NPDES storm water program. The SWRCB is currently developing a Phase II permit for smaller construction sites.

Industrial Storm Water

There are 22 facilities in the watershed regulated under the Statewide Industrial Storm Water Permit. Staff has not had the opportunity to identify industrial facilities who are subject to, but have not filed for, coverage under the Permit in this watershed.

Caltrans

Runoff from Caltrans is regulated pursuant to State Board Order No. 99-06-DWQ. Staff routinely meets with staff from Caltrans District 8 (San Bernardino) and District 11 (San Diego) to discuss storm water issues related to projects in the watershed. The next significant project in the watershed that may require staff oversight will be the widening of Winchester Road. This project will probably occur within the next several years.

NPDES Wastewater Program

The NPDES program deals with the discharges of pollutants from point sources to surface waters. In the Santa Margarita watershed, the SDRWQCB currently regulates discharges from 5 municipal wastewater treatment facilities, 2 dairies, and 8 groundwater extraction projects with NPDES requirements.

The **Rancho California Water District (Rancho)** has been conducting a demonstration project since 1996 on live stream discharge to Murrieta Creek. The demonstration project consists of a discharge of 2 MGD of treated effluent to Murrieta Creek. The demonstration project is scheduled to be completed this year and Rancho has applied for a new permit to increase the discharge to 3-5 MGD. Staff will bring the proposed permit before the Board at the October 9, 2002 Board Meeting.

USMC Base Camp Pendleton operates four treatment plants on the Base, with three discharge locations to the Santa Margarita River. Each treatment plant has its own NPDES permit. The Base is currently exploring options to achieve compliance with these permits, and with a Cease and Desist Order issued by the SDRWQCB. The discharges consistently fail to meet the receiving water limitations in the permits. The Base's options for achieving compliance include the following: discharging to the ocean via the Oceanside ocean outfall instead of the Santa Margarita River, improved advanced wastewater treatment with live stream discharge to the Santa Margarita River, and sending waste from the Base to another agency for treatment. Staff is tracking the Base's progress to achieve short and long term compliance.

Waste Discharge Requirement Program

Waste discharge requirements (WDRs) are issued to discharges to land from point and nonpoint sources and to certain discharges to surface waters from sources that are not subject to NPDES permits. Currently, three landfill sites (Skinner Filtration Plant Landfill, Rainbow Canyon Landfill and Anza Sanitary Landfill), seven wineries, sixteen onsite disposal systems (campgrounds, RV and mobile home parks), three industrial facilities, four sewage collection systems,

two water reclamation projects, six wastewater treatment facilities, and the land application of biosolids are subject to WDRs.

Sewer Spills

Between July 1, 2001 and January 1, 2002, there were two sewer spills reported in the watershed. Camp Pendleton facilities were responsible for these spills. Sewer spills have not been a significant issue in the upper watershed, but several reclaimed water spills have occurred in the last year. Since the SDRWQCB cannot collect monetary penalties from a federal agency, staff issues Notice of Violation letters to enforce compliance and require clean-up when sewage spills occur on Camp Pendleton.

Biosolids

Riverside County is one of the primary areas in the San Diego Region for land application of sewage biosolids. During 2002, approximately 12,000 dry tons of biosolids was applied to agricultural land. Due to other priorities, staff has not conducted a detailed assessment of the overall application of biosolids in the watershed. In addition, the current requirements adopted by the SDRWQCB for these operations were issued in 1997 and should be rescinded as they are not consistent with the general requirements of the SWRCB.

Discharge of Fill to Surface Waters

The discharge of fill to surface waters is an example of a discharge that is not subject to NPDES permits, but is subject to State waste discharge requirements (WDRs). As discussed in the above section on wetlands, such discharges are required to obtain a Section 401 water quality certification. However, the certification program lacks the program resources to conduct the necessary evaluation of project proposals and the subsequent assessments of project compliance and mitigation success. Consequently, staff is left to utilize the SDRWQCB authority in the WDR program to effectively regulate projects proposing the discharge of fill.

Environmental Cleanup Program

Camp Pendleton

On Camp Pendleton, over 500 underground storage tanks (USTs) have been removed in order to comply with the 1998 deadline for upgrading. Historically, there are 271 reported unauthorized release sites base-wide. Some are closed cases, but many are still being assessed and mitigated.

Also, there are 29 significant non-UST releases under investigation and cleanup within the Santa Margarita Watershed on the Camp Pendleton base. These sites

are being addressed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). They are in various phases of the CERCLA process. Contaminants encountered at these sites include: chlorinated solvents, dioxins/furans, metals, pesticides, petroleum products and constituents, herbicides, and polychlorinated biphenyls (PCBs). Impacted media include soil and ground water. Sensitive receptors include Base production wells, human health, and the environment. Staff work with US EPA Region 9 and the California Department of Toxic Substance Control to investigate and clean up these sites.

Naval Weapons Station Fallbrook

There is one unauthorized UST release site at the Naval Weapons Station Fallbrook that falls within the boundaries of the Santa Margarita Watershed. This site requires a Phase II investigation, which involves gathering specific data and groundwater samples. The contaminants of concern include gasoline and typical gasoline constituents.

Also, there are 13 non-UST sites on the Naval Weapons Station Fallbrook that are being addressed under CERCLA. All of these sites are within the initial remediation phase of the CERCLA process. Potential contaminants of concern include: chlorinated solvents, dioxins/furans, metals, pesticides, petroleum products and constituents, herbicides, PCBs, and pentachlorophenol. Sensitive receptors include on-Base and down gradient production wells, human health, and the environment.

Temecula

Staff in the Tank Site Mitigation & Cleanup Unit are currently working in Temecula, with 5 different gas stations that have had unauthorized methyl tertiary butyl ether (MTBE) releases from their USTs. A public supply well owned by Rancho California Water District (RCWD) has been shut down due to the presence of MTBE above the maximum contaminant levels for drinking water. The well (number 118) is located near Murrieta Creek. A pump test will be conducted in October to help determine which station is the source of the MTBE.

Furthermore, groundwater contamination has been found around several new gas stations along Highway 79, which parallels Temecula Creek. The RCWD has several wells along this corridor, but no contamination has been found in the wells to date. Riverside County Department of Health Services is the lead on these cases, but we are assisting to protect the public supply wells from contamination.

Conclusion

In accordance with the Strategic Plan, we seek to work with our internal and external stakeholders to establish clear priorities in the Santa Margarita

Watershed. Key strategies include:

- Development of a strong stakeholder base that is committed to working cooperatively to prepare and implement an effective watershed management plan.
- Target significant pollution sources, such as urban runoff and hydromodification, affecting surface and ground water beneficial uses.
- Increase focus on addressing water quality impairments in the watershed.
- Identify long-term threats to groundwater and focus efforts to implement appropriate pollution prevention and remediation actions.
- Development of a coordinated program to collect, report and assess water quality information.